ARRAY CYTOMETRY

This application is a continuation-in-part application of Application Serial No. 09/171,550, filed on October 26, 1998, ~~corresponding to~~ which is a national stage entry of PCT International Application No. PCT/US97/08159, filed on April 24, 1997, which in turn is based on U.S. Provisional Application Serial No. 60/016,642, filed on April 25, 1996. Applicants hereby claim the priority of these prior applications pursuant to 35 U.S.C. §§ 119 and 120. These prior applications are incorporated herein by reference.

FIELD OF THE INVENTION

The present invention generally relates to the field of materials science and analytical chemistry.

The present invention specifically relates to the realization of a complete, functionally integrated system for the implementation of biochemical analysis in a planar, miniaturized format on the surface of a conductive and/or photoconductive substrate, with applications in pharmaceutical and agricultural drug discovery and in in-vitro or genomic diagnostics. In addition, the method and apparatus of the present invention may be used to create material surfaces exhibiting desirable topographical relief and chemical functionality, and to fabricate surface-mounted optical elements such as lens arrays.

BACKGROUND OF THE INVENTION

I - Ions, Electric Fields and Fluid Flow: Field-induced Formation of Planar Bead Arrays

Electrokinesis refers to a class of phenomena elicited by the action of an electric field on the mobile ions surrounding charged objects in an electrolyte solution. When an object of given surface charge is immersed in a solution containing ions, a